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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,641	12/22/2003	Chen-Chung S. Chang	EMSI 34180US2	7411
116	7590	03/23/2006	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			LAVILLA, MICHAEL E	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

CM

Office Action Summary	Application No. 10/743,641	Applicant(s) CHANG ET AL.	
	Examiner Michael La Villa	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20050926, 20040325</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
2. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Regarding Claims 1-51, it is unclear what distinguishes a "strip" from a "foil."
5. Regarding Claims 2-7, et seq., wherever the phrase "commercially pure" is used, it is unclear what this means. As commercial standards may change over time, it is unclear what is required. It is unclear whether copper alloys are necessarily excluded from a designation such as "commercially pure copper."
6. Regarding Claim 12, it is unclear what is meant by reference to "Claim 15." It is unclear what is the antecedent basis of the phrase "one of said layers." Which layers are these?
7. Regarding Claims 13 and 16, it is unclear whether this recites a product-by-process limitation of cold-rolling to lessen thickness without intermediate heat treatment, or whether something else is being claimed.
8. Regarding Claim 15, it is unclear how the claim can depend on itself. It is unclear what is the antecedent basis of the phrase "one of said layers." Which layers are these?

9. Regarding Claim 26, it is unclear whether the titanium layer is considered one of the "any adjacent metallic layer."
10. Regarding Claim 31, it is unclear what is meant by the phrases "CDA 102Cu" and "201Ni." These are commercial designations, whose meanings are subject to change. They are therefore indefinite terminology.
11. Regarding Claim 32, it is unclear whether this claim specifies a product-by-process limitation to be performed prior to roll bonding described in Claim 30, or possibly to be performed with roll-bonding.
12. Regarding Claim 33, it is unclear whether the numbers in "15Cu-15Ni-70Ti" specify weight percentages or not. Analogous rejections apply for Claims 46, 47, 50, and 51.
13. Regarding Claim 34, it is unclear whether the claimed covering layer is to be disposed on all sides of the core or not.
14. Regarding Claims 34 and 36, it is unclear what is the antecedent basis of "said covering layer," since there may be more than one.
15. Regarding Claim 41, it is unclear whether this claim specifies a product-by-process limitation to be performed prior to forming the laminate of Claim 37, or possibly to be performed with assembling the laminate.
16. Regarding Claim 42, it is unclear what is meant by the phrase "the other of copper and nickel." Since, for example, the "first metallic layer" can include "one of copper and nickel," it can be copper, nickel, or copper and nickel. Therefore, it is unclear what is "the other."

17. Regarding Claim 45, it is unclear whether "any adjacent layer" includes the core.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

19. A person shall be entitled to a patent unless –

20. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

21. Claims 1, 4, 5, 11-13, 16, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirano et al. USP 5,028,495. Hirano et al. teaches roll bonding nickel or nickel alloy sheets to each side of a titanium core sheet in order to form a brazing strip. See col. 2, line 52 through col. 4, line 20 in Hirano. Hirano teaches annealing subsequent to cold rolling bonding.

22. Claims 1, 4, 5, 11-13, 16, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Jha et al. USP 5,553,770. Jha et al. teaches roll bonding nickel or nickel alloy sheets to each side of a titanium core sheet in order to form a brazing strip. See Figure 3; and Example 1 in Jha et al. Jha et al. teaches annealing subsequent to cold rolling bonding.

23. Claims 1-3, 7, 8, 10, 11-13, 16, 19, 20, 22, 25, 26, 29, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Mennucci USP 5,761,799. Mennucci teaches roll bonding copper alloy sheets to each side of a titanium core sheet in order to form a brazing strip. See Abstract; Figures 3 and 5; col. 3, line 55 through col. 4, line 32 in Mennucci '799.

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24. Claims 1, 4, 5, 10, 11-16, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Galasso et al. USPN 4,034,454. Galasso et al. teaches a titanium/zirconium core laminated with nickel layers on each side, wherein the composite is a perform for brazing. See Galasso et al. (col. 4, lines 26-49).

25. Claims 1-30, 34-45, 48, 49, and 52-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirano et al. JP 4-006173. Hirano et al. teaches a composite brazing material formed of a zirconium core and coated on each side with Cu/Ti/NiCu laminate. See Hirano et al. (Figure 1 and corresponding discussion on pages 388 and 389).

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

27. (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

29. Determining the scope and contents of the prior art.

30. Ascertaining the differences between the prior art and the claims at issue.

31. Resolving the level of ordinary skill in the pertinent art.

32. Considering objective evidence present in the application indicating obviousness or nonobviousness.

33. Claims 1-13, 19-30, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan USP 4,725,509. Ryan teaches a Ni/Cu/Ti/Cu/Ni

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laminate that may be formed by roll bonding to form a composite sheet, but does not exemplify forming the composite sheet in this manner. See Figure 1; col. 2, line 67 through col. 3, line 17; col. 3, line 51 through col. 4, line 20; col. 4, lines 43-48; and col. 5, lines 43-57 in Ryan. It would have been obvious to one of ordinary skill in the art at the time of the invention to roll bond the sheets of Ryan to form the composite of Ryan since Ryan teaches that roll bonding is an effective method of making these composites. Since Ryan does not disclose using copper alloys, it would be expected that the copper of Ryan is indistinguishable from commercially pure copper.

34. Claims 1-3, 7, 8, 10, 11-13, 16, 19, 20, 22, 25, 26, 29, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mennucci et al. USP 6,022,426. Mennucci teaches copper/metal/copper composites formed by roll bonding to form a composite sheet, wherein the copper is commercially pure. Mennucci does not exemplify titanium core layers, but teaches that titanium may be the core material. See col. 3, lines 51-63; col. 4, lines 20-32; and col. 6, lines 15-40 in Mennucci. It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the laminate of Mennucci with a titanium core layer as Mennucci teaches that titanium is an effective core material.

Allowable Subject Matter

35. The reviewed prior art does not teach or suggest the subject matter of Claims 31-33, 46, 47, 50, and 51. Particularly, these specifically claimed materials are not taught or suggested in combination with the other claimed limitations.

Conclusion

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.
37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
38. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
39. A translation of JP 04-006173 has been ordered from Translations Branch.

Michael La Villa
20 March 2006


MICHAEL E. LAVILLA PH.D.
PRIMARY EXAMINER